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Cooperative Extension Work in Agriculture and Home Economics

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By O. E. Reed,
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What interest do the extension agencies have in the production of high-quality milk? This is a question which I feel is most important to the dairy industry of the country and should be faced squarely by all those who are interested in promoting the welfare of the dairy farmers through extension agencies. It is true that many of the agricultural colleges have done some extension work on the sanitation of milk production, but such effort has nearly always been operated as a minor project or as a sideline introduced and carried on when there was special call because of trouble which dairymen were experiencing with plant operators or public health officials. This work has, on the whole, been sporadic and spotty and most of it has been of such character that it could not be dignified by the designation of a real project in quality milk production.

There are two outstanding reasons why extension agencies should actively interest themselves in a concerted national movement for improving the quality of milk and cream.

The first of these is an economic one. The dairy industry could add millions of dollars to its annual receipts if only milk of the finest quality were produced. Ten or fifteen years ago the situation that existed was accepted as inevitable, and it was difficult in some places to secure good milk. However, as a result of years of constant work by agricultural and public health agencies, our milk supplies have been remarkably improved. Our dairy farmers are faced with problems of economic production and marketing which are becoming more and more acute. They must hold their present markets for dairy products; they should increase their markets; losses due to sour and off-flavored milk and low-grade dairy products should be stopped; and the consumer's appetite should be stimulated with a palatable, safe milk of good keeping quality.

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* A paper delivered Nov. 15, 1930, at a meeting of the Committee on Extension Organization and Policy, Association of Land-Grant Colleges and Universities, in connection with the forty-fourth annual convention of the association, Washington, D. C., Nov. 17-19.

In the second place, milk and its products are inseparably linked to the Nation's health and the normal growth and development of its people. Scientific studies have shown that the food people eat, especially during the periods of rapid growth in early childhood, has a lasting effect on the size of the entire race. President Hoover, when addressing The World's Dairy Congress in 1923 as Secretary of the Department of Commerce, said, "The exhaustive researches of nutritional science during the last two decades have, by the demonstration of the imperative need of dairy products for the special growth and development of children, raised this industry to one of the deepest national and community concern, for as I have said, it is not alone the well-being of our people, but it is the very growth and the virility of our race, to which you contribute."

Nutrition experts state that for proper nutrition and health a normal growing child should receive a quart of milk daily during the years of rapid growth, and that an adult should consume daily at least a quart of milk or its equivalent in butter, cheese, and ice cream. Surveys have shown that on the average the children of the United States are getting considerably less than a quart of milk a day each, and that more milk is consumed per capita on the farms than in the cities, though this is not true in certain specific localities. The per-capita consumption of milk in the United States has been steadily increasing year by year. In 1921 the yearly per-capita consumption was 49 gallons, as compared with 55.3 gallons in 1926. The best information available indicates that approximately a quart of milk per day, or the equivalent in other dairy products, is desirable for the average growing child, in order to provide for the optimum storage of calcium and phosphorus and the best development of bones and teeth; and that milk is a most valuable source of these very necessary elements.

The question of child welfare is of such importance that the President has formed The White House Conference on Child Health and Protection, composed of many of the Nation's outstanding men and women in science and other fields, to study what may be done to safeguard the child and give him the greatest opportunity for growth and development. It is interesting to note that in the vast conference, dealing with all angles of child welfare, milk is the only food which has been considered extensively.

The question of rural welfare and its relation to the milk supply involves not only the adequacy of the supply of milk for farm families, but also the purity of the supply consumed by these families. For many years the milk supplies for most of our cities have been inspected. At the same time, millions of farm folks have been using milk which has not been adequately supervised as to the conditions of sanitation under which it was produced. The farm child should have the same protection in his milk supply as the city child.

The improvement of the quality of milk is essentially an agricultural problem and responsibility. The leadership and vision for this important line of work should be supplied by the extension agencies of the States, and can well be coordinated with the regulatory work of health departments and other control agencies. The enforcement of certain arbitrary regulations may bring about a wholesome milk supply, but constructive and permanent improvements can be brought about only through proper education of the producers. To the State departments of agriculture and to the State colleges of agriculture through their extension services, naturally falls the task of this educational work. A sound extension plan for improving the quality of milk is not only invaluable to the agricultural communities, but it will lend strength to the powers vested in milk-control agencies. In the first place, where regulations exist the industry must comply with them or encounter difficulties in marketing its products. In the second place, men of vision in the dairy industry wish to comply with requirements, and they even go beyond the regulations; they realize that the production of high-quality milk and cream is of paramount importance to the advancement of the industry.

I have said that extension work on quality milk production need not interfere with the regulatory activities of the constituted authorities. The health departments and other designated agencies have the power to enforce laws and regulations, and they should be the last word as to the quality of milk that can be marketed in the community which they are delegated to protect. After these standards of quality have been set, the big question then is, How can farmers efficiently and economically produce milk which will comply with these standards? Unquestionably, the agricultural agencies are the instrumentalities to which farmers logically look for learning better methods of production. Educational and extension work of this sort is certainly in direct line with the responsibility and experience of these agencies, and therefore, it seems to me, it is clearly their business and duty to promote it. That the effectiveness of such cooperation is recognized by public-health authorities is shown by the following quotations from an article, entitled "A Public-Health Survey of Iowa," by Dr. A. J. McLaughlin, medical director, U. S. Public Health Service, and published in Public Health Reports, vol. 45, No. 28, July 11, 1930. Dr. McLaughlin says, in part:

"The Iowa State College of Agriculture and Mechanic Arts is doing public-health work in several fields. This work in no way conflicts with, but on the contrary is very helpful to, the State department of health. Work in connection with production of milk, tuberculosis of cattle, undulant fever, examination and research in industrial wastes and other fields, should be continued and expanded by larger appropriations. Some means can be devised for correlating this work with the general public-health work of the State without disturbing its location or curtailing its activity.*****

"Milk production activities are now exercised by the dairy and food division, department of agriculture. The supervision of milk pro-

duction on the farm belongs to the department of agriculture; but in marketing milk to the consumer, the disease menace is the concern of the health authorities."

I am sure that it needs no further argument to convince even the most skeptical that the extension agencies are directly concerned and that it is their specific job to help dairy farmers to produce the best quality of milk.

How, then, may the quality-improvement program be carried out? In the first place, it is commonly understood that the sanitary supervision of milk, cream, and other dairy products is of vital public-health concern and economic importance, and should receive the coordinated attention of all State and local agencies, including public-health authorities, agricultural departments, and agricultural, educational, and extension organizations within the State or community. It is necessary for those concerned with extension work to get a state-wide and nation-wide viewpoint of this whole matter. It should not be a sub-head or a half-defined project, but a program based upon a broad understanding of community needs and which covers an area thoroughly. In the area in which the work is projected all milk producers should be included, whether they ship milk to the city, deliver to products plants, or produce milk only for consumption in their own homes or those of their neighbors.

The California State Department of Agriculture has done one of the most effective pieces of milk improvement work that has been accomplished in any of the States. That department, because of its close touch with producers and manufacturers of dairy products, has an unusual opportunity to study methods of milk production, and to devise practical and efficient methods for sanitary control. The efforts of all State and local agencies interested in any way in this problem are coordinated. Among these agencies are public-health authorities; agricultural departments; agricultural, educational, and extension organizations in the State or community. California is cited because it provides one of the best working examples of an economical State-wide program for the protection of the public health, improvement of milk, and the instruction of the dairy industry in the best-known methods for the economical and sanitary production and processing of dairy products.

The United States Department of Agriculture and the various State agricultural colleges have the research and extension facilities and personnel not only to study questions of milk quality improvement, but to disseminate information on the subject among producers and manufacturers of the Nation. The Department has outlined plans for quality-improvement projects which can be, and are being, promoted by a number of the State extension services in their work with adults and with boys and girls of the 4-H clubs. Copies of the plans which the Department suggests as a basis for the formulation of quality-improvement projects are available in mimeographed form and will be sent to anyone who wants them. A number of States have already become interested in this program and are taking active steps to put it into effect.

The first of these projects is designed for the 4-H dairy clubs. Its purpose is to teach the club members the fundamental factors involved in producing high-quality milk. The lessons are demonstrated, and the club members take and keep samples under various conditions. The boys and girls are taught to make simple tests, such as the methylene-blue, the sediment, and other tests. An interesting outgrowth of this work in one of the States has been the formation of club teams to demonstrate quality milk production before all the granges in their county.

The other project is carried on with adults. In order to reach the greatest number of dairymen, the use of intensive extension methods and the cooperation of all interested agencies are contemplated. Under the plan which the bureau suggests the following methods and procedure are used:

1. - Under direction of the State dairy specialist, a preliminary survey is made of:

   (A) Market requirements for whole milk or by-products:
   - (a) Grades and prices of milk now being sold.
   - (b) Approximate amount of each grade sold.
   - (c) Comparison of amount of each grade produced at the present time and amount needed.

   (B) Present production methods and conditions:
   - (a) Health and cleanliness of dairy cattle.
   - (b) Condition of dairy barns.
   - (c) Number of milk houses.
   - (d) Methods of milking.
   - (e) Methods used in cleaning and treating utensils to kill bacteria.
   - (f) Facilities for cooling and storing milk.
   - (g) Where possible, determine the present situation as to bacterial count and sediment.

2. - A meeting of dairy specialists, county agents, dairy project leaders, and representatives of milk dealers, producers' associations, the State Department of Agriculture, and city and State health departments, is held. At this meeting the results of the survey are presented, and this is followed by a discussion of the needs in the State or county and the methods to be followed. A committee is organized for developing and carrying on the work. The committee consists of the State dairy specialist, county agents, and a representative of each of the following : the State department of Agriculture, State and city health departments, and producers' and dealers' organizations. In demonstrating the tests before this group and in making the preliminary survey, the Bureau of Dairy Industry is in a position to give the services of members of its staff in States where such services are desired.

3. - A conference of the leaders of this project is then held, to present the results of the survey and to lay plans for the educational work which is to follow.

4. - This conference is followed by a short, intensive campaign of publicity in which the local papers and circular letters are important factors. In this publicity a brief resume of the conditions found in the survey and of the suggestions made at the meeting for improvements, is given. The object of this publicity is to acquaint the farmer with the purpose of the meetings which are to follow. Essay and poster contests on quality milk are carried on in the schools as a part of the publicity work.

5. - A series of farmers' meetings is held, at which discussions on the relation of high-quality milk to increased incomes are carried on, and a demonstration of the methylene-blue and sediment tests is made. At these meetings, a list, known as a cooperators' list, is made of farmers who want help with their problems in the building of milk houses and ice houses and remodeling barns, and want instruction in the sanitary treatment of utensils, etc. Cooperators are enrolled on special cards; and a record of the adoption of the improvements recommended is noted on these cards. Also a list of all the dairymen attending the demonstrations is made as a prospect list. Tours to farms where improvements have been made are planned at this time.

6. - Follow-up publicity matter is sent to all dairymen. This includes special letters, enrollment cards, and leaflets dealing with some phase of a particular meeting.

The county agent submits to the local newspapers a series of news articles on the progress made in improving the quality of the milk in his area. State and Department publications on milk quality are sent to prospect lists.

Measuring results:

At the end of the season, a follow-up card requesting the following information is sent to all dairymen on the prospect list:

1. - Number of milk houses built.
2. - Number of ice houses built.
3. - Number of barns remodeled.
4. - Number of steaming cabinets built.
5. - Number of herds tuberculin tested.
6. - Improvement of milk supply as shown by -
   (a) Amount of milk rejected.
   (b) Increase in premiums paid for quality milk.
   (c) Laboratory tests.
7. - Number of cooperators.
8. - Number of meetings held and attendance.
9. - Number of demonstrations.

A second card is sent to those not replying to the first card.

It will be noted that this plan calls for cooperation between the extension forces and the people engaged in regulatory work. This is essential, and also mutually beneficial. When cooperation is assured the

subject-matter teaching and inspection methods will be unified and strengthened. The extension program will be the means of causing many dairymen voluntarily to improve their practices, and, as it succeeeds, less regulatory work will be required. The final and lasting benefits will be that the public will be supplied with higher-quality dairy products, and the producer will have his business on a more stable and more profitable basis. Areas in one State which started the cooperative-area improvement work have just been re-surveyed by the Bureau of Dairy Industry, and it has been found that a remarkable improvement in the quality of the milk has taken place in the last year.

Educational programs for improving the quality of milk should be carried on extensively by all the agricultural agencies and by the dairy industry itself. Such agencies are in intimate contact with every branch of the dairy industry. Unbalanced programs of dairy sanitation lead to undue costs in producing and processing milk. On the other hand, practical quality-improvement work not only serves to protect health and welfare, but is a direct aid to the dairy industry through the widening of markets and elimination of financial losses.

It is a problem so vast and intricate in its ramifications that it requires the proper cooperation of all agencies that are in any way interested in milk, and that includes practically every organization in city and country. Each agency has certain definite ends to accomplish, and if each one does his part the result will be a proper correlation of work without friction, which will produce the desired results harmoniously and quickly.

Many milk-control officials feel the need of cooperation with the agricultural authorities in their States, and I wonder whether we have always been on the spot to give them the advice and assistance which they have needed and wanted. I was struck by a recent article by a member of the State board of health of a certain State, in which he said that"It will be only through the close cooperation of the public health officials, State officials, Bureau of Dairying, Department of Agricultural Economics, and local and Federal officials of all kinds that we shall be able ****** to raise the standard of market milk. ****** We propose to do everything in our power to bring about and maintain the cooperation of all agencies interested in the production of high-quality milk."

The solution of this very important problem of raising the quality of the milk which our people consume, on the farm as well as in the city, requires, then, the joint efforts and earnest cooperation of all agencies which have an interest in milk, in the welfare of the farm business and the farm home, and in the health of all our people. It requires the whole-hearted cooperation of milk inspectors, dairy farmers, county agents, and all people interested in a good milk supply. It calls for the formulation and prosecution of a definite, intensive program, carefully thought out and pushed to the limit of our extension facilities.

Through our extension services we teach farmers, among other things, how to grow more wheat per acre and how to increase milk production per cow, and the farm wife how to prepare food so as to feed the farm family better. But what greater extension accomplishment could there be than to bring about a state-wide, and then a nation-wide, production of high-quality milk?

I question very seriously whether there is any other field of effort open to our extension agencies which offers as great and broad an opportunity for vital service to all our people, as does this project for the improvement of the quality of the Nation's milk supply, both city and rural. We have extension projects which are very important, of course, but where is the one which so deeply touches both the economic welfare and the health of as many Americans as this one?

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